CABLE CARRIER CHAIN

Publication number: WO0063586
Publication date: 2000-10-26
Inventor: BLASE GUENTER (DE)
Applicant: IGUS GMBH (DE); BLASE GUENTER (DE)
Classification:
- International: ***F16G13/16; H02G11/00;*** **F16G13/00; H02G11/00;** (IPC1-7): F16G13/16
- European: F16G13/16; H02G11/00C
Application number: WO2000DE00908 20000324
Priority number(s): DE19991019076 19990419

Also published as:
EP1175571 (A1)
US6550233 (B2)
US2002056336 (A1)
EP1175571 (A0)
DE19919076 (A1)
more >>

Cited documents:
DE3714056
EP0844415
DE4313075

Report a data error here

Abstract of **WO0063586**

Cable carrier chains are used to guide cables, hoses and similar from one connection point to another connection point, at least one of these two connection points being moveable. The inventive cable carrier chain consists of a plurality of plastic chain links which are or can be interconnected in an articulated manner. Each chain link is made up of two side plates (2) and two transversal segments (4, 5) and at least one of the transversal segments can be detachably connected to said side plates. A snap-in device, which interacts with a detent tongue provided at each end of the transversal segment, is also provided. The snap-in device is configured in the form of an elastic snap-in hook (12) so that it can also be comfortably released by hand. When the respective transversal segment is in its fixed state, said snap-in hook is positioned centrally in relation thereto and projects over the outer surface of the transversal segment so that it can be accessed by hand. A recessed grip is configured in the area of the snap-in hook, in the outer surface of the transversal segment, said recessed grip extending from the detent tongue in the direction of the centre of the chain link.

Result Page

< RTI ID=1.1> Energieführungskette< /RTI> The invention relates to one < RTI ID=1.2> Energieführungskette< /RTI> to < RTI ID=1.3> Führung< /RTI> from cables, < RTI ID=1.4> Schläuchen< /RTI> and such a thing of one < RTI ID=1.5> connection < /RTI> place to another port, whereby at least one of the two ports is localvariable, existing from a variety articulated more connected with one another and/or. connectable chain links from plastic, which are formed from two sidelax and two transverse webs in each case, whereby at least one of the transverse webs < RTI ID=1.6> lösbar< /RTI> with the sidelax connected and/or. more connectable, the transverse web is reciprocally disposed, parallel to each other longitudinal, itself in < RTI ID=1.7> Längsrichtung< /RTI> the transverse web extending < RTI ID=1.8> Ansätze< /RTI> , those exhibits < RTI ID=1.9> Ansätze< /RTI> also transverse to this located cylindrical bearing journals provided are, which exhibit sidelax two parallel slots, into which < RTI ID=1.10> Ansätze< /RTI> the transverse web engage, are provided into which sidelax nutenförmige bearing points with undercut, into which the bearing journals are einrastbar, and which exhibit a sidelax snatching mechanism, which cooperate with a rest border planned at each end of the transverse web.

Known one < RTI ID=1.11> Energieführungsketten< /RTI> the mentioned type (DE 43 13 075 C2) < themselves in the best way; RTI ID=1.12> bewährt.< /RTI> With these known energy guidance chains the closure between the sidelax and the transverse webs must take place by means of a tool, which < a screwdriver; RTI ID=1.13> ähnlich< /RTI> is.

The invention is the basis the object, which < RTI ID=1.14> Energieführungs < /RTI> it chains in such a manner to modify that the transverse webs convenient < itself also by hand; RTI ID=2.1> öffnen< /RTI> leave.

< RTI ID=2.2> Erfindungsgemäss< /RTI> this object is < thereby; RTI ID=2.3> dissolved, < /RTI> that the snatching mechanism is formed as elastic snatching hook, which lies in the fixed state of the respective transverse web central between the approaches, by which clearance between the two approaches < through-seized and from the outside by hand; RTI ID=2.4> zugänglich< /RTI> is.

With < RTI ID=2.5> erfindungsgemässen< /RTI> Construction < RTI ID=2.6> left; /RTI> the energy guidance chain very easy < itself by hand; RTI ID=2.7> open, < /RTI> as the operator embraces the transverse web with the hand, which can be tilted up, and with the thumb the snatching hook unlocked, so that the transverse web on the desired in each case side can become pivoted upward.

In order to facilitate the operation still, the snatching hook in the fixed state of the transverse web can < RTI ID=2.8> über< /RTI> < RTI ID=2.9> Aussenfläche< /RTI> the transverse web outside manage, so that one < the snatching hooks with the thumb easy; RTI ID=2.10> betätigen< /RTI> can.

Preferably the snatching hook at the end of a resilient tongue is disposed. Due to this construction exists < RTI ID=2.11> Possibility, < /RTI> the snatching hook very easy < RTI ID=2.12> betätigbar< /RTI> to arrange, so that the operator larger force does not < RTI ID=2.13> benö < /RTI> tigt, around the connection too < RTI ID=2.14> öffnen.< /RTI>

The snatching hook is convenient so wide formed, as the light distance between the two < RTI ID=2.15> Approaches, < /RTI> at the transverse web the provided are. Thus the snatching hook can become relative wide designed, so that despite the easy Schwenkbarkeit of the snatching hook a good < RTI ID=2.16> Stabilität< /RTI> achieved becomes.

The rest border is convenient with one to < RTI ID=2.17> Aussenfläche< /RTI> the transverse web provide pointing restflat, which the snatching hook < in; RTI ID=2.18> eingerasteten< /RTI> State < RTI ID=2.19> übergreift.< /RTI> To < RTI ID=2.20> Lösen< /RTI> the snatching hook needs then only of < RTI ID=2.21> Rastfläche< /RTI> hinuntergescho it ben to become to which an only short shift way is required.

▲ top

Furthermore the restflat can do a lateral, that snatching hook directed < RTI ID=3.1> schräge< /RTI> < RTI ID=3.2> Auflauffläche< /RTI> exhibit, which moves the snatching hook with low pressure of the transverse web, until he < RTI ID=3.3> über< /RTI> the restflat of the rest border catches. By this construction is through low pressure of the respective transverse web < just like also engaging of the snatching hook easy with other known constructions; RTI ID=3.4> möglich.< /RTI>

The material of the transverse web can exhibit a rear cutting on that the rest border of immediate opposite side. Thus it is < RTI ID=3.5> possible, < /RTI> the snatching hooks if necessary also with the help of a screwdriver-similar tool to move and the connection too < RTI ID=3.6> lösen.< /RTI> From this < RTI ID=3.7> Möglichkeit< /RTI> one will make use for the use of a tool if a great many bars too < RTI ID=3.8> lösen< /RTI> are and/or if the operator possibly. an injured hand has.

< RTI ID=3.9> Vorzugsweise< /RTI> is < in; RTI ID=3.10> Aussenfläche< /RTI> the transverse web itself a grip recess formed extending from the rest border toward to the track link center, into which to < RTI ID=3.11> Öffnen< /RTI> the transverse web of the thumbs inserted and then against the snatching hook pressed becomes. Due to this construction it is < RTI ID=3.12> possible, < /RTI> to train the snatching hook relative short, without becomes reduced thereby the control friendliness.

The grip recess can be wide formed as the light distance between the two < RTI ID=3.13> Shoulders, < /RTI> so that sufficient place < RTI ID=3.14> für< /RTI> setting the operating thumb present is.

The bearing journals are convenient to < RTI ID=3.15> Aussenseiten< /RTI> < RTI ID=3.16> Ansätze< /RTI> disposed. Due to this construction with the bearing journals the provided can < RTI ID=3.17> Ansätze< /RTI> wide formed is <, then; RTI ID=3.18> dass< /RTI> the entire construction becomes more stable.

The invention is in the drawing for example looks at light and in the appended in detail on the basis the drawing described. Show: Fig. < RTI ID=4.1> 1< /RTI> the view of one of a sidelax chains member from the inside, Fig. 2 a section along line II-II that
Sidelax in accordance with Fig. < RTI ID=4.2> 1, < /RTI> whereby the end of a transverse web is to become inserted, Fig. 3 the same section as in Fig. 2 with einge rastetem transverse web, Fig. 4 a section along line IV-IV out
Fig. < RTI ID=4.3> 1, < /RTI> whereby the transverse web from above sets einge to become is, Fig. 5 the plan view on a transverse web,

Fig. 6 the plan view on a chain link without the upper transverse web in accordance with Fig. 5, Fig. 7 to 10 in the detail the mechanism of engaging egg of nes transverse web, Fig. 11 and 12 the mechanism < RTI ID=4.4> Lösens< /RTI> a transverse web, Fig. 13 another < RTI ID=4.5> Ausführungsbeispiel< /RTI> the Erfin dung, with that the snatching mechanism to the Lö sen the transverse web with the thumb and/or. another suitable finger < RTI ID=4.6> betätigt< /RTI> becomes and Fig. 14 the same < RTI ID=4.7> Ausführungsform< /RTI> in accordance with Fig. 14, whereby however the snatching mechanism with tels a tool < RTI ID=4.8> gelöst< /RTI> becomes.

Energy guidance chains become from a variety of chain links 1 composed, which become articulated connected with one another.

After Fig. < RTI ID=5.1> 1,5< /RTI> and 6 exists < RTI ID=5.2> einzelnes< /RTI> Chain link 1 from two sidelax 2 and 3, those < RTI ID=5.3> über< /RTI> two transverse webs 4 and 5 connected with one another are. In Fig. < RTI ID=5.4> 1< /RTI> in the section represented lower transverse web 4 is common with the two sidelax 2 and 3 as integral < RTI ID=5.5> Spritzgussteil< /RTI> from a plastic, which < on a certain degree; RTI ID=5.6> Elastizität< /RTI> , manufactured exhibits. The upper transverse web 5 is formed as separate part and can by means of a snatching mechanism 6 at the two sidelax 2 and 3 fixed become. Here it is also more conceivable that the lower transverse web becomes 4 connected by means of a corresponding formed snatching mechanism with the two sidelax 2 and 3.

The upper transverse web 5 formed as separate part, which is to become connected by means of the snatching mechanism 6 with the two sidelax 2 and 3, around those < RTI ID=5.7> Energieführungskette< /RTI> < RTI ID=5.8> öffnen< /RTI> and close too < RTI ID=5.9> can, < /RTI> consists of an elongate member, which < at both ends with; RTI ID=5.10> Ansätzen< /RTI> 7 and 8 provided, the parallel ran to each other and itself in < RTI ID=5.11> Längsrichtung< /RTI> the transverse web 5 extend. < RTI ID=5.12> Ansätze< /RTI> 7 and 8 is also provided transverse to this located cylindrical bearing journals 9, those to < RTI ID=5.13> Aussenseiten< /RTI> < RTI ID=5.14> Ansätze< /RTI> 7 and 8 disposed are.

To reasons of the gap 10 between the two approaches 7 and 8 is a rest border 11 disposed, which cooperates with the snatching mechanism 6.

Like in particular from Fig. 1,2 and 3 to see is, consists the snatching mechanism 6 of an elastic snatching hook 12, which fits with its width precise into the clearance 10 between the two approaches 7 and 8 and cooperates with the rest border 11. < RTI ID=5.15> Elastizität< /RTI> the snatching hook 12 by the fact achieved becomes that 13 disposed at the end of a resilient tongue is. The resilient tongue 13 is < RTI ID=5.16> über< /RTI> lateral slots 14 and a rear clearance 15 of < RTI ID=5.17> übrigen< /RTI> Material separate, so that the snatching hook 12 in in Fig.

2 represented section to the right and on the left of moved will can.

In the regions on both sides beside the snatching hook 12 are two recesses 16, which < in the mounted state to the receptacle; RTI ID=6.1> Ansätze< /RTI> 7 and 8 of the transverse web 5 serves. The bearing journals 9 seize thereby in lateral < RTI ID=6.2> Führungsnuten< /RTI> 17, in which they engage a rear rear cutting 18 in the final state.

At its top the transverse web 5 in the immediate terminal provided to the rest border 11 at each end with a grip recess 19 is, the somewhat wide formed is < as the light distance 10 between the two; RTI ID=6.3> Ansätzen< /RTI> 7 and 8.

As out of the figs is to be taken 2 to 4, the upper transverse web becomes 5 first inserted steep on a side from above into its receiving area, whereby < RTI ID=6.4> Ansätze< /RTI> 7 and 8 into the recesses 16 engage and the two bearing journals 9 into the guiding grooves 17 to be slid, until they engage the rear undercut 18. Then the transverse web becomes 5, as in Fig. 3 shown, into the horizontal < RTI ID=6.5> Schliesslage< /RTI> pivoted, into the snatching hook 12 one to < RTI ID=6.6> Aussenfläche< /RTI> the transverse web pointing restflat 20 of the rest border 11 < RTI ID=6.7> übergreift.< /RTI> The engaging procedure is in the detail in the Fig. 7 to 10 shown.

After the transverse web 5 first in < RTI ID=6.8> geöffneten< /RTI> State with its bearing journals 9 into the guiding grooves 17 inserted is, becomes it in accordance with Fig. 7 toward the arrow downward pivoted. Along the rest border 11 planned accumulate-oblique 21 at the hook 12 slides along, like in particular from Fig. 8 to infer is, until in Fig. 9 illustrated position achieved is. At this position the snatching hook 12 snatches < RTI ID=6.9> über< /RTI> the rest border 11 and rests then against the restflat 20 of the rest border 11 and is in this position secured.

On in the drawing the not represented < RTI ID=6.10> face < /RTI> the side catches the transverse web 5 after the same scheme into the closed position, whereby however the bearing journals 9 and the snatching hook 12 engage 5 simultaneous here in almost horizontal position of the transverse web.

If one wants to open the transverse web 5, then must the snatching hook 12 from in Fig. 11 represented layer by pressure toward the arrow in in Fig. 12 represented layer pivoted becomes. In this position the rest border 11 is not any more by the snatching hook 12 disabled, then < RTI ID=7.1> dass< /RTI> the transverse web 5 in this place upward raised will can, whereby the bearing journals 9 from < itself; RTI ID=7.2> Führungsnuten< /RTI> 17 < RTI ID=7.3> 16sen.< /RTI> The pressure toward in Fig. 12 of represented arrow can take place for example by means of the thumb of the operator, during < RTI ID=7.4> diese< /RTI> with < RTI ID=7.5> übrigen< /RTI> Fingers embraces the transverse web 5.

Applying the pressure on the snatching hook 12 by means of a finger 22 is in Fig. 13 shown, in which a modified embodiment of the invention is shown. In this < RTI ID=7.6> Ausführungsform< /RTI> is more immediate < in the material of the transverse web 5 on that the rest border 11; RTI ID=7.7> gegenüberliegenden< /RTI> Side a rear cutting 23 provided. With this embodiment can also in accordance with Fig. 14 the pressure on the hook 12 by means of a tool 24 applied becomes, which < for example a screwdriver; RTI ID=7.8> ähnliche< /RTI> Shape exhibits.

The screwdriver point the rear rear cutting 23 is < RTI ID=7.9> geklemmt< /RTI> and < RTI ID=7.10> Werkzeug< /RTI> 24 in Fig. 14 to the left pivoted, whereby the snatching hook becomes 12 pressed into a release position, in which the rest border is 11 free and which can become transverse web 5 on this side upward moved.

Igus < RTI ID=8.1> Spritzgussteile< /RTI> < RTI ID=8.2> für< /RTI> the industry GmbH 51147Köln
Energy guidance chain < RTI ID=8.3> Bezugszeichenliste< /RTI> 1 chain link 2 sidelax 3 sidelax 4 transverse web 5 transverse web 6 snatching mechanism of 7 approaches of 8 approaches 9 bearing journals < RTI ID=8.4> 10 Abstand< /RTI> 11 rest border 12 snatching hooks < RTI ID=8.5> 13 Zunge< /RTI> 14 slots < RTI ID=8.6> 15 Freiraum< /RTI> 16 recesses 17 guiding grooves 18 rear cutting 19 grip recess < RTI ID=8.7> 20 restflat 21 Auflaufschräge< /RTI> 22 fingers 23 rear cutting 24 < RTI ID=8.8> Werkzeug< /RTI>

Europäisches Patentamt
European Patent Office
Office européen des brevets

Claims of WO0063586	Print	Copy	Contact Us	Close

Result Page

Notice: This translation is produced by an automated process; it is intended only to make the technical content of the original document sufficiently clear in the target language. This service is not a replacement for professional translation services. The esp@cenet® Terms and Conditions of use are also applicable to the use of the translation tool and the results derived therefrom.

< RTI ID=9.1> Energieführungskette< /RTI>
Claims < RTI ID=9.2> 1. Energieführungskette< /RTI> to the guide of cables, < RTI ID=9.3> Schläuchen< /RTI> and such a thing from a port to another
Port, whereby at least one of the two < RTI ID=9.4> connection < /RTI> place localvariable is more connected with one another, existing from a variety articulated and/or. connectable chains arrange from plastic, which are formed from two sidelax and two transverse webs in each case, whereby at least one of the transverse webs < RTI ID=9.5> lösbar< /RTI> with the sidelax connected and/or. more connectable, the transverse web reciprocally disposed, par allele to each other longitudinal is, itself in < RTI ID=9.6> Längsrichtung< /RTI> of the Transverse web extending < RTI ID=9.7> Ansätze< /RTI> , those exhibits < RTI ID=9.8> Ansätze< /RTI> also transverse to this located cylindrical bearing journals verses hen are <, the sidelax two parallel slots on wise, into those; RTI ID=9.9> Ansätze< /RTI> the transverse web engage, into which sidelax nutenförmige bearing points with rear ones are cutting provided, into which the bearing journals are racable, and which sidelax one snatch mechanism exhibit, those with one at each end of the
Transverse web intended rest border, D A D u r C h g e k e n n z e i C h n e t that snatch mechanism (6) as elastic snatching hooks (12) ausge forms is, cooperates that in the fixed state of the respective
Transverse web (5) central between < RTI ID=9.10> Ansätzen< /RTI> (7,8) by the clearance (10) between the two < RTI ID=9.11> Ansätzen< /RTI> (7,8) through-seized and from the outside by hand < RTI ID=9.12> zugänglich< /RTI> is.

2. Energy guidance chain according to claim < RTI ID=9.13> 1, < /RTI> D A D u r C h < RTI ID=10.1> g< /RTI> e k e n n z e i C h n e t that the snatching hook (12) in the fixed state of the transverse web (5) < RTI ID=10.2> über< /RTI> < RTI ID=10.3> Aussenfläche< /RTI> the transverse web (5) outside manages.

3. Energy guidance chain according to claim 1 or 2, D A D u r C h g e k e n n z e i C h n e t that the snatching hook (12) to
End of a resilient tongue (13) disposed is.

4. < RTI ID=10.4> Energieführungskette< /RTI> after one of the claims 1 to 3, < RTI ID=10.5> thus characterized, dass< /RTI> that Snatching hook (12) as wide is as the light distance (10) between the two approaches (7,8).

5. < RTI ID=10.6> Energieführungskette< /RTI> after one of the claims 1 to 4, D A D u r C h g e k e n n z e i C h n e t that those carries detent out (11) with one to < RTI ID=10.7> Aussenfläche< /RTI> the transverse web (5) pointing restflat (20) is provided, snatch hook (12) in the locked state < RTI ID=10.8> übergreift.< /RTI>

6. < RTI ID=10.9> Energieführungskette< /RTI> after one of the claims 1 to 5, D A D u r C h g e k e n n z e i C h n e t that those carries detent out (11) a lateral, the snatching hook (12) course turned < RTI ID=10.10> schräge< /RTI> < RTI ID=10.11> Auflauffläche< /RTI> (21) exhibits, which that-press the snatching hook (12) with never the transverse web (5) out steer, until it < RTI ID=10.12> über< /RTI> < RTI ID=10.13> Rastfläche< /RTI> (20) of the rest border (11) catches.

7. < RTI ID=10.14> Energieführungskette< /RTI> after one of the claims 1 to 6, D A D u r C h g e k e n n z e i C h n e t that the Mate exhibits rial the transverse web (5) on that the rest border (11) un indirectly opposite side a rear cutting (23).

8. < RTI ID=10.15> Energieführungskette< /RTI> after one of the claims 1 to 7, D A D u r C h < RTI ID=10.16> g e k e n n z e i C h n e t, dass< /RTI> in < RTI ID=10.17> Aussenfläche< /RTI> the transverse web (5) itself of the rest border (11) toward to the track link center an extending
Grip recess (19) formed is.

▲ top

9. < RTI ID=11.1> Energieführungskette< /RTI> according to claim 8, D A D u r C h g e k e n n z e i C h n e t that the grip recess (19) is more ter mash than the light distance (10) between the two < RTI ID=11.2> Ansätzen< /RTI> (7,8).

10. < RTI ID=11.3> Energieführungskette< /RTI> after one of the claims 1 to 9, D A D u r C h < RTI ID=11.4> g e k e n n z e i C h n e t, dass< /RTI> the La gerzapfen (9) to < RTI ID=11.5> Aussenseiten< /RTI> < RTI ID=11.6> Ansätze< /RTI> (7,8) at ordered are.